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ABSTRACT

The purpose of this pilot project was to determine whether involvement, as described by verbal and nonverbal indicators, increased as children worked at language arts learning centers characterized by increasing possibilities for involvement. Twelve first graders, randomly selected from an open space school, were each observed at three learning centers. Thirty-six 15-minute observations were videotaped and recorded by 2 observers who used the Tally Sheet for Verbal and Nonverbal Indicators of Involvement to code the subject's behavior. Verbal utterances were also recorded verbatim and categorized during these observations. Learning centers consisted of activities designed so that 2 children could engage in a task independent of a teacher. The Level I learning center consisted of classification tasks, requiring pupils to sort and match pictures in the areas of reading, social studies and science. The Level II learning center was open-ended and consisted of art activities involving paper, pencils, crayons, etc. The Level III learning center consisted of a large prop box and adjacent shelves containing an assortment of clothing, toys and household items which lent themselves to a variety of uses in dramatic play. Results of an analysis of variance indicated that as the learning centers increased in complexity, so did the number of observed indicators of involvement. (Author/CM)

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A STUDY OF THE IMPACT OF SPECIALLY DESIGNED SETTINGS ON CHILDREN'S INVOLVEMENT: A PILOT PROJECT

A Quality Improvement Project Sponsored by the
Maryland State Department of Education in
Cooperation with Anne Arundel County
and the University of Maryland

PS 010159

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April 1976

ABSTRACT

TITLE: A STUDY OF THE IMPACT OF SPECIALLY DESIGNED SETTINGS ON CHILDREN'S INVOLVEMENT: A PILOT PROJECT

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The purpose of this study was to determine whether involvement, as described by verbal and nonverbal indicators, increased as a child worked at language arts learning centers characterized by increasing possibilities for involvement. In this study, involvement was defined as the investment of self an individual brings to an interaction with other persons or materials. Data on involvement were obtained by coding nonverbal indicators contained in the Involvement Instrument and a set of verbal indicators of involvement.

Twelve subjects were randomly selected from the first grades in Rippling Woods Elementary School, an open-space school located in a middle-class suburban community in Anne Arundel County, Maryland. The sample was limited to children who spoke English and who did not have a known speech impediment. Each child was observed interacting with three specially designed learning centers, each of which increased in its possibilities to involvement. A total of 36 observations was recorded by two observers who used the Involvement Instrument. Verbal utterances were also recorded and

categorized during these observations. Fifteen minutes of data were recorded during each observation.

A one-way repeated measures analysis of variance was performed to determine the significance of differences among means. The differences at the three levels of learning centers were statistically significant at the .05 level for nonverbal indicators of involvement including Motion-toward-material, Motion-toward-both-materials and persons, Vision-away, Physical Display of Emphasis, and for the verbal indicator Extending. A comparison of mean frequencies and standard deviations suggested that the trend appeared to be in the expected direction, that is, as the learning centers increased in complexity so did the number of observed indicators of involvement.

Among the implications derived from the study were that learning centers can be developed which have the potential to increase a child's involvement as well as to teach the substance of a given school subject.

FOREWORD

Characteristic of classrooms in which children appear to be learning is a high degree of involvement. Involvement is a concept critical to educational practice but one about which we know relatively little. Therefore a pilot study was conducted to ascertain the impact of learning centers of varying degrees of complexity on children's involvement. Nonverbal and verbal indicators of involvement were observed and recorded as children worked at specially designed learning centers in the language arts.

We are grateful to all who supported, planned, and executed this research. Included in this group were the first-graders and the staff of Rippling Woods Elementary School, the Research Division of the Maryland State Department of Education, and selected faculty and graduate students from the University of Maryland, College Park campus.

Many colleagues collaborated on various aspects of this study. In that spirit we would like to name each person in this report but it is necessary to limit ourselves in this respect.

To Dr. Mohammad Shami of the Maryland State Department, we extend thanks for his listening to our ideas, encouraging us to pursue them, and identifying a setting in which we could try them out. From the initial meeting at Rippling Woods Elementary School, Mrs. Margaret Sherkey, Principal,

and her staff cooperated to the fullest providing us with ideas, stimulation, and time. Dr. Charles Johnson, Professor of Measurement and Statistics at the University of Maryland provided invaluable advice and direction even while he was on sabbatical. We also thank Ms. Adrienne Escoe, a doctoral student in the Early Childhood-Elementary Education Department, for constructing the excellent sample learning centers used in orientation sessions with the Rippling Woods staff.

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CHAPTER ONE

PROLOGUE: TEACHERS AND RESEARCHERS COLLABORATE

Frequently research in education is carried out by university professors who seek to utilize personnel and children of a school for a project which the school has had little part in shaping. At other times school personnel seek to enhance their own teaching by conducting their own research. The university may have little or no part in designing such studies. Although it is fruitful to have both universities and school systems engaged in their separate knowledge-producing enterprises, a useful cross-fertilization of ideas can occur when personnel from the public schools and higher education jointly inquire into practice.

Through the Quality Improvement Program of Maryland's State Department of Education, the potential exists for cooperative research efforts among the state's schools and its institutions of higher education. One such effort was the collaborative project developed by the staff of Rippling Woods School of Anne Arundel County and researchers of the College of Education of the University of Maryland. Although the initial proposal and the final report were developed by the University of Maryland, much of the implementation of the study was jointly conducted by the parties involved.

The remainder of this chapter deals with several matters relative to what transpired when teachers and researchers attempt to work together. Comments are made on the following topics: (1) Why a collaborative research project, (2) Specific areas of collaboration, and (3) Toward closer collaboration.

Why a Collaborative Research Project

One of the advantages of a collaborative research project is that teachers and children are affected by knowledge production which has a bearing upon the classroom. One way of insuring that there is pay-off for those most affected by educational research is to see that they have some type of involvement in the project. A related advantage is that persons involved in higher education have an opportunity to become immersed in the realities of the schools, thus providing a heightened awareness of the kinds of research enterprises to which they and the university students with whom they work should be giving attention. Another advantage is that persons are more apt to participate wholeheartedly in a research project when they can see the possible advantages a study has for them.

In the particular study being reported both investigators and school personnel had a number of interrelated interests: How to develop learning centers which invite student involvement, how to stimulate interest in the communication process, and how to work effectively in an open space school. Although each party had additional

concerns there was a set of common concerns from which to start.

Specific Areas of Collaboration

In addition to meetings held prior to the actual initiation of the project and to meetings held during the data gathering aspects of the project, three meetings were held with the teachers relative to the purpose, over-all design of the project, and specifics which would be jointly planned. Following the data gathering teachers brainstormed on implications. These implications are included in the last chapter. The remainder of this chapter focuses primarily on matters considered in the sessions with teachers.

Collaboration in Meeting Expectations of Both Parties

One of the major purposes of the university personnel was to design learning centers which would elicit varying degrees of children's involvement as measured by the Involvement Instrument (See Appendix A. 1). When talking with school personnel it was learned that their concern was about the language arts program; therefore, the decision was made to develop learning centers which focused upon various aspects of language arts.

One of the assumptions of the investigators was that if materials in a learning center were individualized and personalized children were more apt to be involved as measured by the Involvement Instrument. Because of the

need of personalizing, the investigators, in their original design, had three learning centers at each of the three levels. However after interacting with the teachers it was agreed that one learning center at each level could be designed in such a manner that the prerequisite for personalization could be met--at least to a degree. Therefore teachers, using the models developed by the University personnel, developed a learning center for each of the levels. Appendix B. 1 is an overview of the study as presented to the teachers. The criteria to be met in designing learning centers at each of the three levels are in Appendix B. 2.

Collaboration on Determining the Nature of the Learning Centers

Although the learning centers and the criteria for them are discussed in more detail in another chapter, a few comments on them are appropriate here. The study called for children to be observed at three learning centers, each of them increasing in the amount of choice and complexity. Investigators and researchers collaborated in that both groups worked with a basic idea of classification that the teachers presented for Level I. The teachers decided to use the topic of stores for Level I centers. However, teachers and investigators jointly considered items in the stores that would be of high interest to the children using the center. Much time was spent by the teachers and investigators discussing and developing the various centers. It was noted that the school had access to additional

people who would assist in developing the centers.

Scheduling

Teachers have a carefully developed schedule (See Appendix C). This is necessitated by the large number of children in the pod and the variety of activities in which the children engage. These activities are planned by the teachers and by the various consultants who work with the children. Despite the fact though that teachers had a tight program for the children, University investigators found them willing to work out alternative plans with the children when the needs of the project necessitated such action.

Teachers were released from their teaching responsibilities on three occasions to meet the researchers for planning and discussion. Minutes of two of these meetings are found in Appendix D.

Collaboration on Data Gathering

Although the researchers gathered the data which is reported in this study, teachers were introduced to the Involvement Instrument. In addition they were given training in how to use the instrument so that they could use it in their own work with children. Appendix A. 1 contains the Involvement Instrument[1] and the Verbal Indicators of Involvement which teachers had the opportunity to use. A typescript of the training tape for the verbal indicators of involvement is in Appendix A. 2.

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[1]Jessie A. Roderick, The Involvement Instrument, Center for Young Children Occasional Paper Fifteen, College Park, Maryland: Center for Young Children, University of Maryland, July 1975.

Teachers were also encouraged to record any follow-up activity children undertook which appeared to be related to the learning centers. Forms designed for teacher use are in Appendix E. 1. A form was also developed to get some input from children relative to the learning centers. This form is in Appendix E. 2.

In Summary

Although the University investigators had identified a research problem and developed a proposal, attempts were made to create a life-like setting for teachers so that there would be some follow-up on the part of teachers on aspects of the project after the researchers had completed their work. The bulk of the work with teachers focused on topics of the meaning of involvement, the utilization of the Involvement Instrument, utilizing language arts as the subject to be studied, the development of learning centers, and scheduling.

Because of time problems little attention was given to the consideration of involvement and its relationship to open space or open education. Ideas for possible future projects on this topic are in the last chapter.

CHAPTER TWO

PURPOSE AND BACKGROUND OF STUDY

This chapter contains the purpose and background for the study. In addition it contains a brief review of related literature.

Purpose of the Study

The major purpose of this pilot project was to study the impact of specially designed settings on children's involvement. Stated another way, the purpose was to find out whether involvment, as indicated by verbal and non-verbal indicators increased as a learner worked at learning centers characterized by increasing possibilities for involvement.

Other purposes of this study were:

1. To engage in collaborative efforts with teachers in creating a set of three language arts learning centers (settings) which would highlight or encourage varying degrees of involvement.
2. To use observation guidelines focusing on nonverbal indicators of involvement to determine differences in involvement with each of the three learning centers.
3. To test procedures designed to identify and categorize verbal expressions of involvement.

4. To provide teachers with opportunities to plan future learning experiences and research projects based on the findings of this study.

Conditions for Involvement

Deciding what one wants to pursue in life or how one wishes to invest his/her time and energies is a major concern of all persons. The school as a major institution of society can help children and youth identify and follow through on significant interests. The necessary conditions for making this possible are:

1. A view of the person as an individual capable of making decisions about how and to what he will commit himself.
2. Settings or learning environments that encourage and make possible a person's becoming involved in significant interactions.
3. School people who not only plan for and with learners in terms of individual interests and abilities, but who also constantly generate information about what transpires when learners interact with settings or learning environments. In so doing, attention is given to a variety of modes of knowing and to the importance of using evaluative techniques that match the purpose of the learning activity.

Anne Arundel County as Setting for Study

Because Anne Arundel County has constructed a number of open space schools, it has demonstrated its commitment to a form of education which permits individualism, creativity, flexibility, and attention to many different ways of knowing. The County has also demonstrated a commitment to research that examines the concept of open education. The setting provided by these open space schools has the potential for encouraging and evoking a high degree of involvement on the part of children in their learning.

By supporting this study in which a small corps of teachers was prepared in planning for involvement and in gathering information as to what occurs in such situations, Anne Arundel County set the ground work for initiating and conducting in other parts of the school or County, studies similar to this one. The significance of the study resides in the possibilities of helping teachers plan in a fashion particularly suitable for education in the open setting.

Related Literature

The nature of activities or interactions that occur in open settings and what happens as a result of these interactions constitute major concerns for persons making decisions about education in open space classrooms. Promises about what open education, however defined, can accomplish and exhortations that it should be studied abound, but there have been too few attempts to systematically obtain evidence about this approach to providing learning

opportunities (Apelman, 1974; Barth, R.S., 1970; Blitz, 1973). Since a major focus of open space classroom instruction is providing learning experiences which facilitate a child or youth's engaging in activities that are personalized to the degree that he can make some choices and can become highly involved, it follows that these qualities of learning experiences must be examined.

Again, the literature on open education is replete with statements about the need for children to have opportunities to become involved or absorbed in an activity (Hymes, 1968; Walberg and Thomas, 1971). Huebner (1975) speaks more cogently to the issue when he urges that youth be given opportunities to realize their own possibilities and not possibilities pre-established by others for them. Persons who want to make it possible for children and youth to realize their own possibilities can invite them to participate in selecting or designing appropriate activities or environments (Krasner, 1976). When children and youth become partners with teachers in this endeavor, involvement is apt to be more personalized and learning more related to the purposes set by the participants.

Measures of learning obtained by administering achievement tests rarely provide evidence of how learning experiences have effected change in a person's decision-making behavior and his/her involvement. In view of this, alternative means of describing what happends when children and youth interact with settings have been devised. Ob-

servational instruments and guidelines have made a major contribution in this area. Recent summaries of observational instruments designed for use in early childhood education include Measures of Maturation published by Research for Better Schools and an ERIC/ECE document (Coller, 1972). Current information about observational instruments in general is found in Mirrors for Behavior and the Classroom Interaction Newsletter published by Research for Better Schools. Researchers have also provided information on criteria for judging observational systems and guidelines for using them (Herbert and Attridge, 1975; Rosenshine and Furst, 1973; and Weick, 1968). Classroom teachers, aware of the limitations of relying solely on achievement test scores as measures of school progress have begun to use observational techniques in a variety of ways (Smith and Leiserson, 1974).

The influence that elements of classroom context related to persons and the nature of the task can have on pupil involvement has been the subject of careful investigation (Kounin, 1970). Another focus of recent research efforts is what transpires when individuals interact with different kinds of settings (Berk and Lewis, 1974). Guidelines for modifying natural settings in order to highlight certain behaviors without disrupting natural events have been proposed in the Handbook of Social Psychology (Weick, 1968). These techniques are particularly pertinent in attempting to gather evidence of the learning that takes place in open settings.

Commitment and involvement have also been examined in disciplines other than education. From such studies are derived insights into the nature of commitment and possible behavioral indications or overt manifestations of commitment. In a study of the psychology of commitment, Tomkins (1965) identified the following characteristics or elements of involvement and commitment: intense feelings and ideation which persist or endure over a period of time, enjoyment, novelty, challenge, and excitement.

In the process of exploring the sociology of religion, Zahn (1970) identified persistence and intensity as evidence of commitment. Other studies of commitment and involvement can provide educators with support and guidance in their efforts to provide children and youth with opportunities to identify and explore deeply critical life issues.

The overview of literature and research related to open education, to observational techniques, and to becoming involved just presented provides direction and impetus for necessary continued research.

CHAPTER THREE

PROCEDURES

This chapter includes the research question, definitions stipulated for the study, limitations of it, and procedures employed in selecting the sample and collecting the data. Also included are descriptions of learning centers used in the study. Procedures employed in analyzing the data and a presentation of the findings are in the next chapter.

Research Question

Deriving from the study's purpose presented in the previous chapter is the following research question: Does involvement as indicated by verbal and nonverbal indicators increase as a learner works at learning centers characterized by increasing possibilities for involvement? It should be noted that language arts concepts were the focus of the learning centers in this study.

Definitions

Two definitions are critical to this study: Involvement and learning centers.

Involvement: The investment of self an individual brings to an interaction with other persons or materials. Involvement is described in terms of verbal and nonverbal indicators. These indicators are found

in Appendix A.

Learning center: An activity designed so that two children can engage in a task independent of a teacher. Directions for the task are given either in writing or through the use of audiotape.

Limitations of the Study

Limitations of the study grew out of the fact that it was a pilot investigation.

1. The population (12 children) was small in one grade and in one school; therefore it is impossible to generalize beyond the school and grade in which the study was conducted.
2. Of necessity the regular program of the first grade was ordinarily fairly tightly planned; therefore initially it was difficult to watch children over a sustained period of time at one activity without interrupting the schedule. After the first data collection period, this limitation no longer existed.

Sample

Twelve subjects were randomly selected from the first grade in an open space school. The school was located in a middle-class suburban community in Anne Arundel County, Maryland. The sample population was limited to children who spoke English and who did not have a known speech impediment. The four first-grade teachers at the elementary school

provided the names of all the children enrolled in the first grade who fit these criteria.

Procedures for Gathering Data

Observations

Each of the selected children was observed interacting within each of the three specially designed learning centers. This resulted in a total of 36 situational observations. The children were assigned to the centers in pairs. Each pair came to the center together and always in the same order. On each occasion the same teacher gave the subjects directions for the activity just prior to their beginning the activity. Two observers were stationed near the learning centers and began coding simultaneously moments after the children had begun the activity. A video-tape machine was set up near the learning centers in order to capture the children's interaction with materials and with one another. Observations occurred at least one week apart, first at Level I, then Level II, and last at Level III.

Each observer was equipped with a cassette tape recorder and ear plugs so that the recording was audible only to the observers. The recordings indicated to the observers where to prepare to code, when to begin coding, and when to break. Observers coded the designated verbal utterances and nonverbal behaviors of the subjects for three, one-minute intervals and then took a one-minute break. This procedure was repeated five times or until the subjects withdrew from the activity, whichever came first.

In other words, coding was possible for a maximum of 15 minutes while total observations, including five one-minute breaks, could last 20 minutes.

Observers used the Tally Sheet for Verbal and Nonverbal Indicators of Involvement to code the subjects' behavior (See Appendix F). A notation was made whenever a change in behavior was observed and when a new interval began. Observers followed the directions for using the Tally Sheet (See Appendix G). Behaviors were identified according to the specified definitions (See Appendix A. 1).

All verbal utterances were analyzed separately but within the context of the specific setting. With a few rare exceptions, all the subjects' verbalizations were recorded verbatim.

Description of Learning Centers

Three levels of learning centers were developed for the study. The centers differed in complexity, with the centers at Level II and Level III being organized to foster greater involvement on the part of each child in the study. Since ability and interest were seen as factors affecting involvement, varying ability levels as well as interests of the children were accounted for in planning each center. The teacher's descriptions of the centers and statements of purposes as well as how the centers satisfied established criteria are found in Appendix H.

Description of Center I

The Level I Learning Center consisted of classification tasks requiring pupils to sort and match pictures in the areas of reading, social studies, and science.

Activity One focused on reading readiness. Standing miniature store fronts were constructed of oak tag and were placed on a flat surface. The child was to select a picture and match it with the store where that object might be found. Matching was completed by placing the picture on a hook attached to the store front.

A numerical self-checking device was used. Numbers on store fronts were designed to correspond to those on the backs of the correct object cards.

Activity Two, planned in a social stuides context, required children to differentiate a family's physical needs from a family's physical wants. Pockets with the headings I need and I do not need were attached to the side of a large cardboard box. Related pictures were to be placed into the appropriate pocket. Children were able to check themselves using the same numerical self-checking device previously described.

A necessary prerequisite for Activity Three was a knowledge of the concept of matter, since children had to read the titles Solids, Liquids, and Gases and place the correct picture in the pocket under one of the three headings. Once again a numerical self-checking system was used.

All activities at Level I were closed, there being only one correct response to each activity. Pupils were not given an opportunity to extemporize.

Description of Center II

The Level II Learning Center was open-ended and consisted of art activities which involved such materials as paper, pencils, crayons, scissors, yarn, beans, etc. Each child listened to a taped story and was requested to finish the story with the aid of his or her imagination and use of the art materials provided. Products at this center varied since individuality on the part of each child was encouraged. Freedom in the selection of method and materials by way of writing, dictating, or picturing a story ending provided for individual differences in ability as well as in interest. Although the children were given a certain amount of freedom, they still had to work within the confines of the taped story setting, characterizations, and plot.

Description of Center III

The Level III Learning Center consisted of a large prop box and adjacent shelves which held an assortment of clothing, toys, and household items. Props were diverse and lent themselves to a variety of uses. Children were encouraged to use their imagination in dramatic play to create their own story settings. Choice in the use of materials and mode of expression were characteristic of this open-ended setting and appealed to ranges of creative ability and

individual interests.

An annotated list of references on learning centers is found in Appendix I.

CHAPTER FOUR

FINDINGS

Findings resulting from an analysis of coded verbal and nonverbal behavior as well as comments on research in the natural setting are included in this chapter.

Analysis of Coded Verbal and Nonverbal Behaviors

A major purpose of this study was to determine if as the possibilities for involvement increase at three learning centers of gradually increasing complexity, the number of observed indicators of involvement increase. The mean frequencies and standard deviations of observed occurrences of each nonverbal and verbal indicator of involvement computed at all three levels of complexity are presented in Table One on page 21. Bar graphs comparing the observed frequencies of each variable at the three levels follow on pages 23, 24, 25. In many instances the trend appears to be in the expected direction, that is, as the learning centers increased in complexity so did the number of observed indicators of involvement.

Comparison of Observed Frequency of Nonverbal Behaviors

The results in the five Motion categories were in the anticipated direction. The greatest number of Motions-

TABLE ONE

MEAN FREQUENCIES AND STANDARD DEVIATIONS*
COMPARED AT THREE LEVELS OF COMPLEXITY

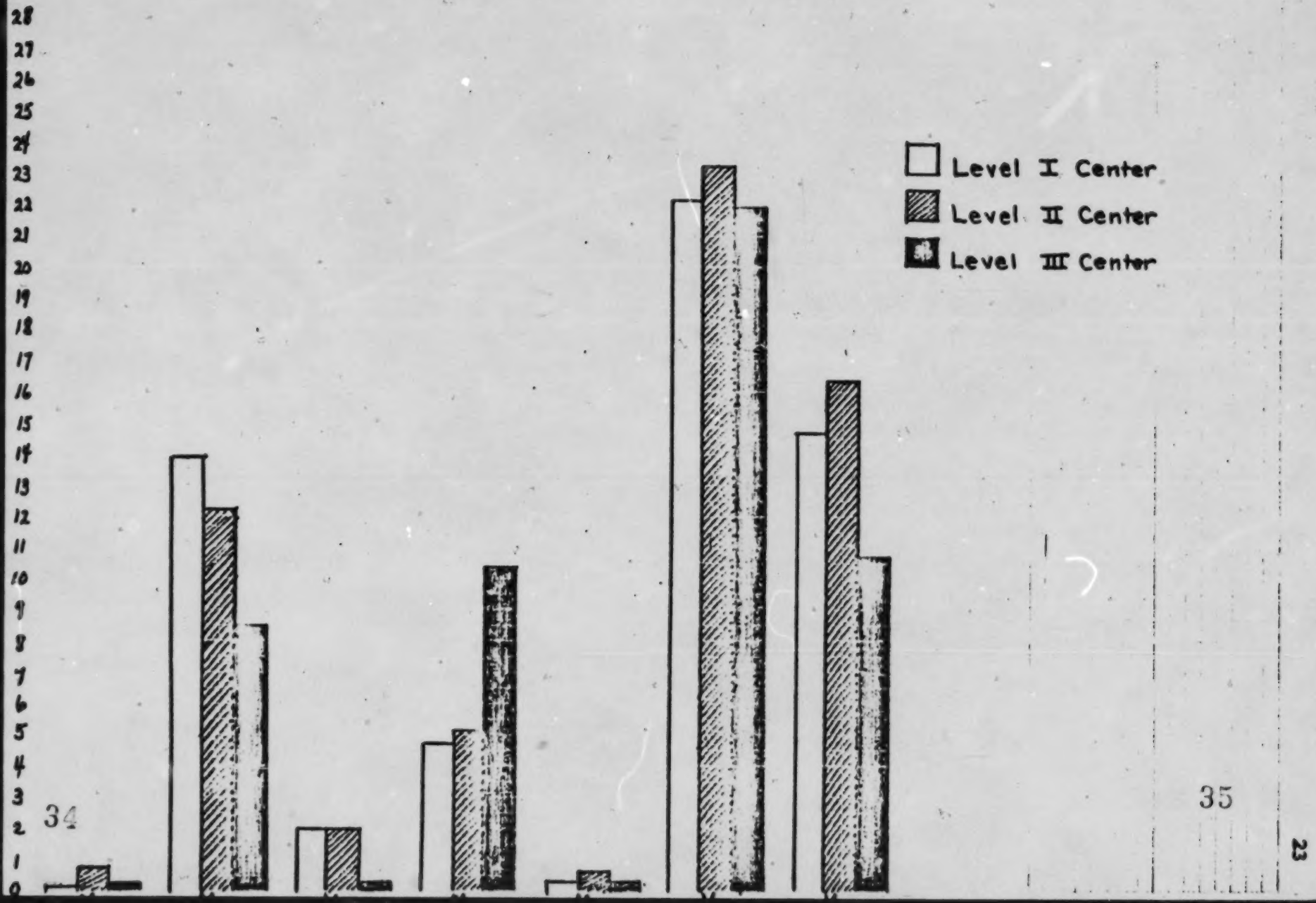
Level	M_T	M_{T_M}	M_A	M_{T_B}	M_{T_P}	V_T	V_A	Precision			Physical Display of Emphasis		
								1's	2's	3's	1's	2's	3's
Level I (Least Complexity)	.08	13.92	2.00	4.67	.25	22.17	14.75	.42	11.25	1.75	.67	11.33	1.25
	(.289)	(3.232)	(1.651)	(3.892)	(.452)	(5.078)	(5.659)		(1.231)			(1.913)	
Level II (Moderate Complexity)	.75	12.33	2.00	5.08	.58	23.25	16.42	3.67	5.25	3.92	2.75	6.42	3.33
	(1.215)	(4.755)	(2.985)	(3.965)	(.996)	(5.029)	(5.680)		(4.056)			(1.557)	
Level III (Greatest Complexity)	.17	8.50	.17	10.42	.25	21.92	10.67	.33	13.92	.25	.42	12.08	5.00
	(.389)	(4.681)	(.389)	(5.435)	(.622)	(7.229)	(7.808)		(.937)			(2.949)	

*Standard deviations are written in parenthesis below the mean frequency.

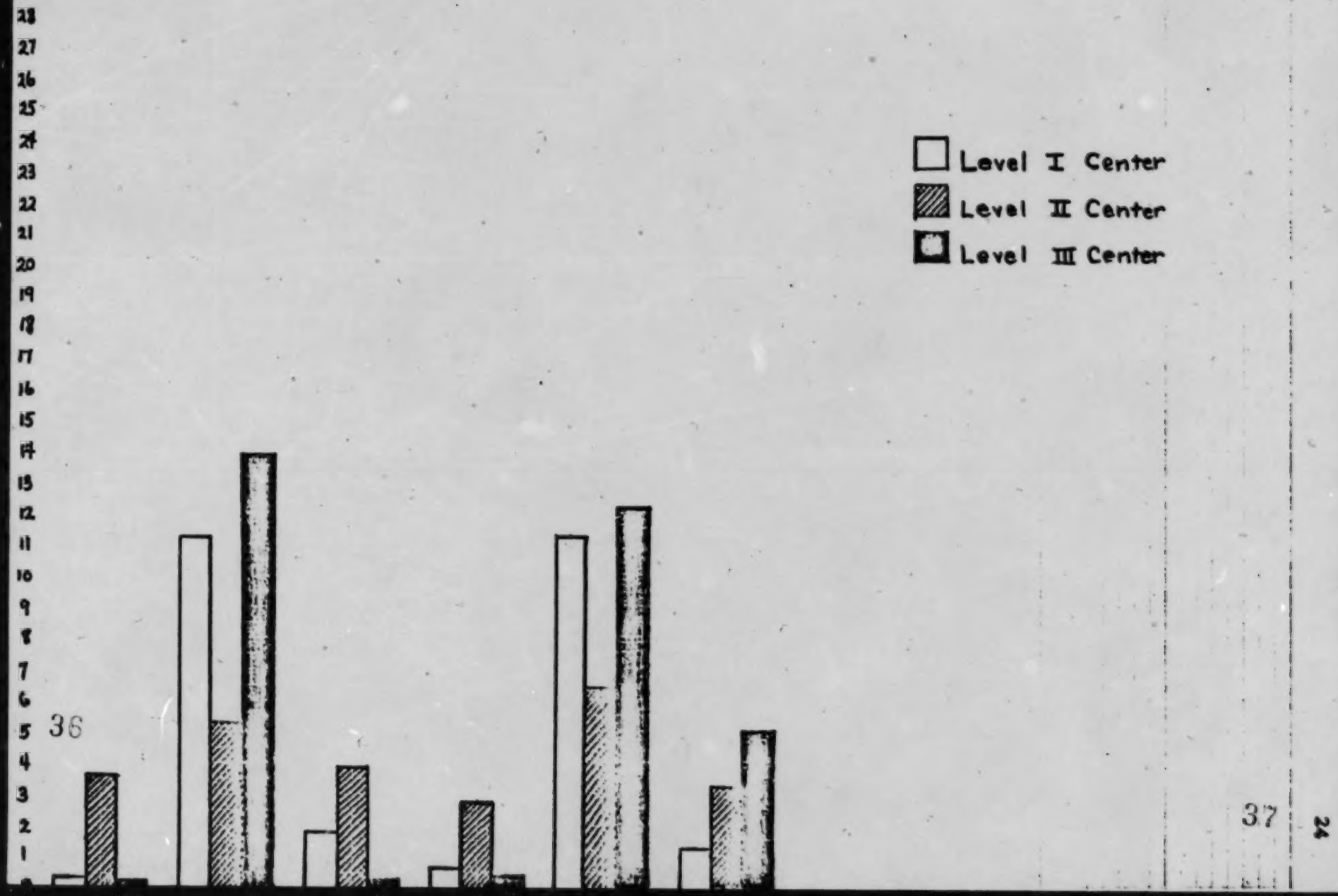
Table One, continued

	Extending	Analyzing	Hunching	Valuing: Preference	Valuing: Enjoyment	Valuing: Comments Away
Level I (Least Complexity)	.17 (.389)	1.83 (23.29)	.00 (.0)	.17 (.0)	.00 (.0)	.00 (.0)
Level II (Moderate Complexity)	1.58 (1.621)	3.83 (4.407)	.25 (.452)	1.50 (.0)	.42 (.0)	.92 (.0)
Level III (Greatest Complexity)	9.33 (14.865)	4.08 (3.965)	.17 (.577)	.58 (.0)	.08 (.0)	.00 (.0)

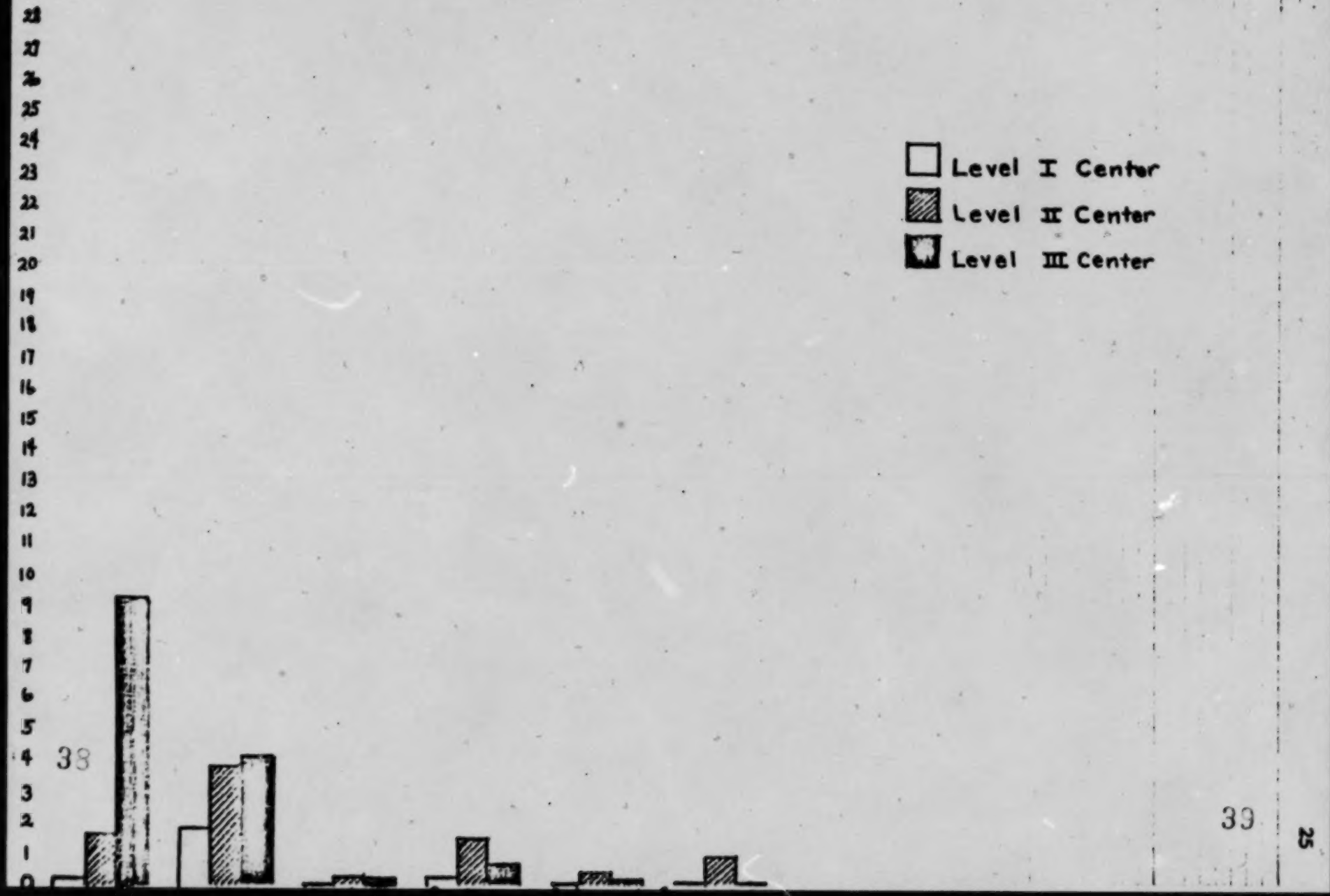
MEAN FREQUENCIES OF NONVERBAL INDICATORS OF
INVOLVEMENT AT THREE LEVELS OF COMPLEXITY



MEAN FREQUENCIES OF PRECISION AND PHYSICAL DISPLAY
OF EMPHASIS AT THREE LEVELS OF COMPLEXITY



MEAN FREQUENCIES OF VERBAL INDICATORS OF INVOLVEMENT
AT THREE LEVELS OF COMPLEXITY



toward-task-and-material (M_{T_M}) were observed at Level I, the level of least complexity where there was only one correct response for every task. The activities at Level I required the children to work with materials with little or no verbalization between children. At Level II, the activity was of moderate complexity. Children were given an open-ended task and were encouraged to create something on their own using a variety of media. The mean number of observed behaviors in the Motion categories did not vary greatly from the scores at Level I. The task at Level II was structured to facilitate interaction with materials while requiring minimal interaction between children. At the level of greatest complexity, Level III, students were encouraged to extend a material or idea, to do something with it. Level III was designed to facilitate interaction between children and with materials. The greatest number of Motions-toward-both-materials and persons (M_{T_B}) were observed at this level.

Observations in the Vision pattern of children were recorded whenever a new coding interval began or whenever there was a change in Vision. For example, a Vision-on-task (V_T) was recorded when a new interval began and when a child focused his vision on an interaction after having looked away. A Vision-away (V_A) was recorded when a child looked away from the task or interaction he was engaged in. When using this coding procedure, low mean scores on Vision-on-task (V_T) and Vision-away (V_A) indicate a high degree of sustained Vision-on-task (V_T). In this study,

the greatest amount of sustained Vision-on-task (V_T) was recorded at Level III, the center of greatest complexity.

In the Precision category there was little variability between the overall mean scores obtained at the three levels. The most precise behaviors (as determined by the greatest number of 3 ratings), were observed at Level II, the level of moderate complexity. At Level II the task was often interpreted artistically and therefore many children were engaged in careful drawing, cutting, and/or pasting. Paradoxically, the least precise behaviors (as determined by the greatest number of 1 ratings) were also observed at Level II. These low ratings were given when the children were listening to the directions for the center through earphones connected to a tape recorder. This paradox accounts for the unusually large standard deviation obtained at Level II. The most average behaviors (as determined by the greatest number of 2 ratings) were observed at Level III. The greatest Physical Display of Emphasis (PDE) was observed at Level III, the most complex level, where the greatest overall mean score was obtained and the most 3 (high) ratings and the fewest 1 (low) ratings were recorded. At this center, the nature of the props provided, coupled with the absence of tables and chairs, encouraged more physical activity. The most average ratings (as determined by the greatest number of 2 ratings) were recorded at Level I.

Comparison of Observed Frequency of Verbal Behaviors

Verbalization between pairs at all the learning centers was minimal. The entire pod was very quiet and the children seemed aware of the need for them to respect the rights of others. Consequently, observations in the verbal section of the tally sheet may seem sparse.

The greatest number of statements recorded across all three levels were in the Analyzing category. The Analyzing category was defined as carefully examining an object or idea; looking at the parts of a whole to determine the nature of the parts and their relationship to each other. As anticipated, the most Analyzing statements were observed at Level III (the most complex level) and the fewest at Level I (the least complex level).

The Extending category was defined as moving beyond what is, adding to, enlarging, applying to another situation or setting. Most extending statements were observed at Level III and the fewest were observed at Level I. These results are in the expected direction. The most Extending statements occurred at the most complex level (Level III) and the fewest at the least complex level (Level I).

At Level II, the greatest number of statements recorded were Hunching (attempting to explain facts or occurrences, supposing what might happen if, push ahead with an idea); Preference (stating a greater liking for, selecting one from many, choosing one over others); Enjoyment (expressing pleasure, delight, satisfaction, or excitement) or Comments

Away (unrelated to the task at hand). However, the number of such statements and the differences between the three levels were miniscule. This could be due to the very limited conversation at Level I and the different mode of conversation at Level III.

There were several other statements recorded which were designated as "other," i.e., not fitting any of the existing, defined categories.

Results of a Test of Statistical Significance

Since each subject experienced all three levels of complexity, a one-way repeated measures analysis of variance was performed to determine the significance of the data. The differences among means at the three levels of complexity were statistically significant at the .05 level: Motion-toward-material (M_{T_M}), Motion-toward-both-materials and persons (M_{T_B}), Vision-away (V_A), Physical Display of Emphasis (PDE), and Extending.

The experiment was exploratory and based on a small number of subjects; therefore, the lack of statistical significance of differences on many of the variables should be interpreted with caution. Due to the small number of subjects the power of the statistical test was low which means differences would have to be quite large before they are significant.

Comments on Research in the Natural Setting

Difficulties encountered in conducting research in the natural setting were minimal. Problems that did occur were with the technical equipment, materials assembled for one of the centers, and definitional agreement of some terms in the nonverbal and verbal categories.

Equipment

One-minute time intervals were recorded on tape. With the use of ear plugs, the tape was played simultaneously for the two observers to note changes in time blocks and break times for each 15-minute interval of observation.

During one of the observations, changes in time blocks were not heard on tape by one of the observers. This was due to problems with volume. In this case, the second observer had to note time changes by gesture. On another occasion a defective tape required a similar arrangement between observers in order to differentiate time blocks.

Because the school staff assisted in video-taping, the video-tape equipment worked effectively and did not place additional responsibility on the two observers. Two points should, however, be noted. Only three rolls of video tape were available. Therefore, during later taping sessions tape had to be reused. Although all tapes were observed initially for checking reliability, the final tapes did not include every observation session at each of the centers. In addition, one recording session of a center was not

taped. This was due to an oversight when the camera and equipment were not turned on to record.

Learning Center Materials

Problems with materials occurred at Level I Learning Center where two activities were assembled through the construction of posters with pockets attached to a cardboard box. Staples holding the posters onto the box fell off and the posters could not be secured. Several children diligently tried to fix the falling posters, but to no avail. These actions required time and effort and prevented the children from working at the task as originally specified.

Agreement on Category Definitions

Need for further refinement of definitions of terms became apparent during initial observations of nonverbal behavior and again at a later time during analysis of verbal statements. At the Level II Learning Center, lack of clarity arose as to what constituted a Motion-on-task directed toward materials (M_{T_M}) or Motion-away from task (M_A). This problem arose when children were using walkie talkies. The use of equipment differed from the purpose for which it was intended. After discussion, observers reached agreement on interpretation and made notations accordingly.

Whenever possible, verbal statements of children were recorded and later reviewed for analysis as to whether these statements fit the designated categories. Problems

occurred at two points--Level I Learning Center and Level III Learning Center. At Level I Learning Center several children made comments to themselves as they matched pictures to store fronts. Examples of such statements were: "Eight;" "Three;" "This is three." Initially, observers felt these statements were some form of Analyzing. After careful consideration, however, they felt they were merely statements better designated as "Matching." At Level III Learning Center comments such as "I'm Grandma, you're Grandpa," and "Ready to go on our vacation?" were interpreted as Extending and finally noted as such after questioning and discussion by observers.

A final problem relating to definitions involved a number of statements labeled "Other." Additional category titles such as "Matching," "Identifying," and "Choosing" might evolve through further content analysis. There is a question, however, whether these three categories are related to involvement. No attempt is made in the Involvement Instrument to account for all possible verbal utterances.

CHAPTER FIVE

CONCLUSIONS AND SUGGESTIONS

This chapter contains certain conclusions derived from the study. The chapter also has a list of suggestions specific to Rippling Woods Elementary School.

Conclusions and Discussion

Within the limitations of this study and based on the findings, it can be concluded that settings in which children interact do have an impact on their involvement as indicated by verbal and nonverbal behaviors. In this study, the nature of observed involvement behaviors was related to the nature of the three levels of learning centers. In general, the indicators of involvement increased with the complexity of the centers. This conclusion is substantiated by the fact that the greatest number of Motions-directed-toward-materials-and persons (M_{T_B}) as observed at the Level III center which offered the children the greatest amount of choice and number of opportunities to interact with persons and to extend ideas and materials. In addition, the greatest amount of sustained Vision-on-task (V_T) was observed at the Level III center as was the greatest Physical Display of Emphasis (PDE).

Further support of the conclusion that the nature of the activities and the observed behaviors are related is found in ratings on Preciseness. The highest ratings on Preciseness occurred at Level II where children often engaged in careful drawing, cutting or pasting.

Findings related to verbal indicators of involvement also tend to support the conclusion that behaviors are related to the nature of settings. The most Analyzing and Extending statements were observed at Level III and the least at Level I. In summary, amount and degree of Motion-toward-material (M_{T_M}), Motion-toward both materials-and persons (M_{T_B}), Vision-away (V_A), Physical Display of Emphasis (PDE), and Extending appeared to be directly related to the increasing complexity of the levels of learning centers.

The findings of the study suggest more specifically that the larger and more varied the response set or the greater the freedom to select from a range of materials or activities of interest to the child, the more the child will put himself into an interaction. However, not all children are comfortable with the greater amount of choice or larger response set and may initially do better in a more prescribed setting or one that consists of more bounded parameters.

The methodology utilized in this investigation provides teachers and researchers with an alternative to paper and pencil product measures administered after a child has

completed an activity. Describing children's verbal and nonverbal responses to a situation or learning center provides adults and children with information on how the process of learning occurs as the child is experiencing it. Vital information about the settings we either select or create for children is also obtained in this process. We can gain answers to questions such as the following:

Which materials were used in which ways?

Which were ignored and why?

Which were inappropriate for certain children?

How do children revise the materials in the process of using them in order to achieve their purposes?

Planning for activities can be enhanced when on-the-spot data are generated. Guidelines for planning for interest and ability levels can be obtained from first-hand observing and listening. In this way materials are adjusted to children and not children to materials.

A major benefit that accrues from carefully designing settings for learning and systematically noting what transpires when learners interact with these settings is the questions that emerge during the process.

Were our hunches about our children and the activity planned for them right?

Do the activities facilitate growth in communication skills or other desired skills?

How do the opportunities presented to children and the results of their interacting with them match beliefs about how children learn?

How can we apply what we learn in this setting to other settings after appropriate revisions?

Suggestions for Rippling Woods Elementary School

Following the collection and analysis of data, the researchers and the participating staff of Rippling Woods School met to discuss the findings and what they suggested for Rippling Woods School. Many of the ideas which follow grew out of the interaction of persons who had been involved in some way in the project.

It should be noted that Rippling Woods School provided a very positive setting for this research study. Despite the fact that the school is large and that the faculty have many responsibilities, the staff seemed to be unusually receptive to considering with us a better understanding of and possible changes on educational practice.

The discussion of possible next steps for Rippling Woods Elementary School is divided into three parts: (1) Suggestions for classroom practice; (2) Suggestions for working with parents, and (3) Suggestions for further research.

Suggestions for Classroom Practice

Modifying the instrument. Integral to this study was the utilization of the Involvement Instrument. This instrument contained both verbal and nonverbal indicators of involvement. Teachers might wish to work through their own understanding of involvement and add to or delete from the instrument those categories which highlight their understanding of involvement. Once the instrument has been modified, teachers might test it out in different types of

settings to see whether their ideas about involvement apply to persons in a variety of contexts.

Analyzing settings. One suggestion made by a member of the school staff was that teachers walk around the school and try to classify the learning centers in terms of the three levels used in this study. By utilizing this procedure teachers can plan learning centers in line with what they perceive to be the gaps in levels.

Studying interactive patterns. Since children had the opportunity to interact in certain of the centers, it would be fruitful to study the interactive patterns of children at centers. How would you categorize children's comments not caught on the Involvement Instrument?

Collaborating with others. Children tended to collaborate with others when the learning center was characterized by more complexity. Attention might be given to the kinds of activities which foster collaboration efforts and those that tend to focus upon individual skills. Teachers may wish to plan in terms of a balance of collaborative and individual enterprises. Children learn certain language and human relations skills when engaged in a project with another person.

Ascertaining involvement in different settings. Although the present study was conducted in the area of language arts, it would be feasible to study children's involvement in centers dictated by the demands of other school subjects. Places to study involvement might be settings created for the social studies, physical education, industrial education,

music, etc. It might be interesting also to study involvement in specially selected settings outside of the school, thus various kinds of field trips might provide fertile territory to study children's involvement.

Cooperating on data gathering. Teachers and assistant teachers can gather data about children. Such information can be useful in program planning. For example, getting observational information on a particular child's involvement in a certain area of the curriculum can prove helpful in future planning. Thus teachers can attempt to schedule themselves so that at given times in the day, data are being gathered by a teacher, an assistant teacher, or even an older student. To capitalize on the messages persons send out relative to their involvement takes time, but in the long run, the moments devoted to data gathering may be moments well spent.

Suggestions for Working with Parents

The staff at Rippling Woods felt that the study had implications for parents. Two suggestions follow.

Assisting parents in studying learning centers. Through a meeting, parents might be alerted to two critical elements of this study: (1) The notion of levels of complexity in learning centers, and (2) the concept of involvement as defined in this study. Parents might be taken around the building to see if they can figure out the level of some of the learning centers. Then they might be introduced to certain categories on the Involvement Instrument and try

to utilize it with video tapes. Parents might later see if they can classify the behaviors of a child in a live setting.

Helping parents develop a range of learning activities at home. After parents have had the opportunity to consider involvement in the school setting, they might want to take a look at the kinds of activities they provide for their children at home. Which ones have low levels of complexity and which ones high levels? How involved do their children tend to get in activities of low and high levels of complexity? How can children who persistently select activities which are low in complexity be helped to choose more complex activities? Children ordinarily have some degree of freedom in the choice of their out-of-school ventures. To help them move toward increased involvement and selection of complex activities can be goals of parents as well as of teachers.

Suggestions for Further Research

In addition to probing further some of the findings cited earlier in the study, Rippling Woods Elementary School might want to consider carrying out one or more of the following projects:

Repeating study. One outgrowth of the present study was the desire both on the part of the school staff and the University researchers to repeat the study at the end of the school year. Of particular interest would have been the noting of shifts in verbal behavior which for some

beginning first graders was minimal. Therefore another year it might prove interesting to replicate the present study in the fall and then to repeat the study in May or June. Comparative data on individual children would help teachers see development in language as well as to see shifts in involvement.

Extending verbal indicators of involvement. Another useful study would be to make verbatim records of what children are saying at learning centers. Then a content analysis of the verbatim records might be made to see if there are categories which should be added to the verbal indicators of involvement. Since language development is so critical in the early years of school, a sustained look at language as it relates to involvement might be useful.

Encouraging children to make own learning centers. Another interesting study would be to compare involvement at learning centers created by children and those created by teachers. Young children could be helped to understand levels of complexity. It might be interesting also to compare themes selected by children and those selected by teachers.

Replicating study with other age groups. The study is broad enough in its design that it would be possible to replicate it at different age levels. Comparing indicators of involvement of the young child with an older student would provide interesting insights on how children react to complexity of activities at different age levels.

Creating studies around the purposes of the school. Rippling Woods Elementary School has a number of curriculum documents and statements for visitors and parents. It would be interesting to take statements of objectives as developed by the school staff and work out research projects similar in design to the one just conducted.

In Conclusion . . .

This study was facilitated by a fortuitous set of circumstances. Rippling Woods Elementary School has a principal possessed with vision of what education can do to and for children. The school has teachers anxious to grow professionally and personally. The school is in a physical plant which lends itself to untold adventures into providing a stimulating setting for children. We were fortunate in being able to tap the experience, enthusiasm, and flexibility of the school staff in assisting us in carrying out this study. We are grateful to the children who responded so honestly to the setting we provided for them.

The study opens up the possibility of a range of studies which look at the relationship of a person's involvement to the complexity of the task. But all of us who in any way are involved in the lives of children must constantly be asking the very penetrating questions: In what is the child involved? In what should the child be involved? Why? As long as we continue to ask the basic philosophical question, the avenues opened up by this study can help provide answers.

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APPENDIX A

A. 1 INVOLVEMENT INSTRUMENT
AND
VERBAL INDICATORS OF INVOLVEMENT

A. 2 TYPESCRIPT FOR VERBAL INDICATORS OF INVOLVEMENT TAPE/QIP RESEARCH PROJECT ON INVOLVEMENT

APPENDIX A. 1

INVOLVEMENT INSTRUMENT

CATEGORY	DEFINITION AND DESCRIPTION	EXAMPLES
Context	Context can be described in terms of the following elements in the setting:	
	1. age of the group or type of class	3-5 year olds; preschool
	2. teacher or leader role	directive, non-directive, initiating or responsive behavior
	3. space--(a) placement of persons in the setting; (b) use of space by persons; and (c) size of space areas	large open area; centers defined by furniture arrangement; persons in small clusters around the room
	4. prominent or unusual features of the setting	visitor in the classroom; theme pervading all activities
	5. time framework--time of day; time scheduling	snack time; free choice time; large block of time
	6. observable changes in any of the above	class moves to playground; teacher role changes
	7. other features specific to your research question	special equipment, materials, furniture arrangement, or grouping of persons
Activity (task)	An Activity exists when the following three criteria are met:	
	1. evidence exists of interaction between the observed person and another person(s) and/or materials	observed person working with puzzle

CATEGORY	DEFINITION AND DESCRIPTION	EXAMPLES
Activity (cont.)	2. evidence exists to indicate that the observed person is giving priority to selected material(s)/person(s) from within the context;	directs attention to puzzle even though other persons move in and out of puzzle area
	3. evidence exists of employment of parts of the body and/or senses	manipulating pieces with fingers and hands
Alternate Activity	An Alternate Activity is characterized by behavior that does not fit the Activity definition.	dancing alone, talking to oneself, running, meandering, etc.
Motion	Motion is defined as movements of the body as a whole and/or parts of the body.	crawl, throw an object, raise an arm
	Note: Motion is recorded by using the sub-categories that follow. Each is identified by a sub-script.	
	M_T --Motion on task or related to task (activity)	stirring (when Activity or task is cooking); turning the page (when Activity is reading)
	M_{T_P} --Motion related to task with person(s)	showing someone how to do a finer play or dancing with a partner
	M_{T_M} --Motion related to task with material)s)	typing on a typewriter
	M_{T_B} --Motion related to task with both person(s) and material(s)	constructing a collage in collaboration with other person(s) or showing picture to teacher or peer
	M_A --Motion unrelated to task or Activity	turning away from a task and picking up a book dropped by a passer-by

CATEGORY	DEFINITIONS AND DESCRIPTIONS	EXAMPLES
Motion (cont)	M_{A_P}--Motion unrelated to task with person(s)	reaching out during parallel play or other solitary activity to pat, push, or kick another
	M_{A_M}--Motion unrelated to task with material(s)	while working at clay table, subject reaches over to water table and pushes boat
	M_{A_B}--Motion unrelated to task with both person(s) and material(s)	while working with clay, subject passes paint to another person
	M --Motion that cannot be identified as related to previous or emerging tasks; "comfort motions"	shifting a leg
Pause	Pause is defined as a person's temporary cessation of an Activity or a condition in which voluntary gross movements of the body stop. There is an expectation that the Activity or Alternate Activity will continue after the pause.	stops running for a few seconds and then continues
Vision	Vision is attention of the eyes as demonstrated by eye movement or eye position. Also included is head movement associated with eye position (head movement often facilitates or makes eye movement possible).	
	Subscripts:	
	V_T--eyes focused on task (Activity); vision may be directed toward person(s) or material(s)	looking at puzzle pieces when activity is putting puzzle together
	V_A--eyes directed away from task	looking up or away from a task

CATEGORY	DEFINITIONS AND DESCRIPTIONS	EXAMPLES
Vision (cont.)	V--eye attention cannot be judged V_T or V_A	looking around while dancing, rolling eyes, widening of the eyes, etc.
Stance	Stance is defined as any change in whole body position.	sitting down, kneeling, standing up, or squatting which lasts more than a fleeting moment
Facial	Facial is defined as any change involving the total face or parts thereof not included in Vision. Mouth movements accompanying speech are also excluded.	movement of the lips, tongue, nose, forehead; biting lips, turning down the lip
Preciseness	Preciseness is indicated by evidence of restrained, controlled body movements or withholding of force resulting from the following:	
	1. delicate or careful manipulation of material(s)	placing small amounts of glue on a light, fragile material
	2. careful or controlled interaction with person(s)	guiding a person's hand in writing
	Note: Preciseness refers to process not accuracy. Low, moderate or high rating is designated by 1, 2, or 3.	
Physical Display of Emphasis	Physical Display of Emphasis is defined as a display of force which may or may not be directed toward person(s) or material(s). It is a pushing out from the body as opposed to a holding back of force.	Indicators include muscular contractions, colorations, tremors as found when grasping the handle of a hammer while pounding or clenching a fist
	Note: 1, 2, or 3 designates a low, moderate or high rating.	

Comments	Comments are explanatory notes, reactions or helpful suggestions. Also recorded are inferences made as they correspond to Vision.	Child is out of sight of observer. V_I--It appears that person looked away (inference).

APPENDIX A. 2

TYPESCRIPT FOR VERBAL INDICATORS OF INVOLVEMENT

TAPE/QIP RESEARCH PROJECT ON INVOLVEMENT

The verbal indicators of involvement that we will be looking at in this study are Extending, Analyzing, Hypothesizing, or Hunching, and Valuing which is divided into 2 categories, preference and enjoyment.

Extending is defined as: moving beyond what is, adding to, enlarging, applying to another situation or setting.

Example: "I'm trying to make this story longer."
"Let's add some more pictures to this story."
"I think these words can be used in another play."

Analyzing is defined as: carefully examining an object, idea; looking at the parts of a whole to determine the nature of the parts and their relationship to each other.

Example: "Let's see how many different hats there are in that blue box."
"I think this hat is more like the black one than that one."

Hypothesizing is defined as: attempting to explain facts or occurrences; supposing what might happen if; pushing ahead with an idea.

Example: "I think it could face the other way and still work."
"What do you think would happen if we changed the ending of the story?"

Valuing is defined as: Preference--stating a greater liking for; selecting one from many; choosing one over others.

Example: "I like this center!"
"I'd rather work at this center than the science one."
"I want to be the giant instead of Jack."

Enjoyment--expressing pleasure, delight, satisfaction, or excitement.

Example: "This is fun!"
"This is really neat!"
"I'm pleased with our story."

BREAK

Crucial to this study is the development of three learning centers that meet specific criteria. Each learning center involves a different level of complexity requiring varying degrees of involvement on the part of students. Three centers have been developed to illustrate these different levels of complexity. Included in each center are tasks of varying levels of difficulty to account for ranges of ability.

SHORT PAUSE

At the first center, which is Level I, are 4 series of pictures. Each series tells a story. The child is asked to recreate the story by placing the cards in the correct sequence. Included are self-checking devices in the form of cards depicting the correct sequence for each story. There is only one correct response; it is a teacher-directed task.

There is no chance for the student to enlarge upon the ideas.

By way of introduction to the center the teacher might say:

"In the four stories you will meet you will see that,
While Humpty Dumpty sat on a wall, and Goldilocks paid a call,
A rabbit met a duck and Little Red Riding Hood had good luck."

Choose a story and put the cards in the right order. There is only one right order to each story. After you finish, you can check your story with the small picture cards in the box.

Following is a little vignette that illustrates what you might hear children saying as they attempt to complete the task. Listen for sentences that fit the categories that were formulated as verbal indicators of involvement.

By way of review, the categories are extending--moving beyond what is; analyzing--carefully examining objects, ideas, and relationships; hypothesizing--hunching--supposition of events; valuing--stating a preference or expressing enjoyment.

"We have to put these cards in order. Let's count and see how many cards are in this story."

"I think there are three or four. There are four. It looks like the story of Humpty Dumpty."

"Oh, good! I like that sotry."

"I don't. I'm going to do this one. Goldilocks--Goldilocks is my favorite. I have the book at home. I think this card would come before that one. And this one must be next."

"No, what if you put this one here and that one over there?"

"I'm finished with the Humpty Dumpty story. It looks in the right order to me. I'll check it now."

In the dialogue you just heard there are three examples of analyzing. The first is: "Let's count and see how many cards are in this story." The children are carefully examining objects. The second example is: "I think this card would come before that one. And this one must be next." The children are looking at the parts of the whole to determine their relation to one another. In the third example, "It looks in the right order to me. I'll check it now." Again the child is analyzing and examining relationships.

Another category is hypothesizing. The following sentence is an example of hypothesizing, "No, what if you put this one here and that one over there?" The child is supposing what might happen if.

In the category of valuing, one division is preference. An example of preference follows: "I don't. I'm going to do this one--Goldilocks. Goldilocks is my favorite." In these sentences the child is choosing one story over the other.

The other division in valuing is enjoyment. It is illustrated when the child says, "Oh, good! I like that story!" The child is expressing pleasure and excitement.

BREAK

SHORT PAUSE

Provided at the second learning center are drawing paper and materials for collage, such as fabric, yarn, colored paper of various shapes, paste and scissors. There are pencils, pens, crayons and writing paper available for creative writing. There is no one correct response, but the children are encouraged to create something on their own. This level center has a quality of novelty to it and calls for personal input on the part of the student.

The child listens to the following script and directions: Once upon a time in a great big, noisy city, a boy and a girl decided to hunt for treasure. They walked and walked and walked some more. They passed thundering trash trucks, mighty motorcycles, and big bouncing buses. Suddenly the boy and girl came to the edge of a mysterious green valley. There were jewel-colored birds in velvety trees and strange furry animals, the likes of which they had never seen. They walked along a cool springy forest path until they came upon a house built of weird and wonderful things. They walked in the open door and found themselves in the middle of a wild, incredible, magnificent dream. What do you think they found? Show it. You may use any or all of the materials you see at this center.

Following is a dialogue of what two children might say as they work at this center. Again, listen for the verbal

indicators of involvement.

Child one: "Mmmm . . . what did they find? What if it was something really scary?"

Child two: "No, I wouldn't like that. I would like it to be something beautiful and magical."

Child one: "Let's see what kind of stuff do we have to work with. We have material--yarn, paper shapes, buttons, paste--all kind of junk. We can use it to make a picture of what they found."

Child two: "No, I think I'd rather write the ending to the story."

Child one: "Ok, you go ahead. I'm going to make a picture with all these things. Maybe even two pictures to make the story longer."

Child two: "This is really fun! I'm going to write a super-terrific ending."

The following sentence is an example of extending: "Ok, you go ahead. I'm going to make a picture with all these things--maybe even two pictures to make this story longer." The child is enlarging; he is moving beyond what is.

An example of analyzing follows:

"Let's see, what kind of stuff do we have to work with? We have material, yarn, paper, shapes, buttons, paste--all that kind of junk."

The child examines objects in an effort to relate to them to one another.

In the sentence, "Mmmm . . .what did they find? What if it was something really scary," the child is hypothesizing; she is making a supposition.

Within the category of valuing is the subcategory of preference. Two examples of preference are: "I would like

it to be something beautiful and magical," and "No, I think I'd rather write the ending to the story." The child is making choices both in regard to style of activity and which materials she will use.

The subcategory of enjoyment is illustrated by the next sentence:

"This is really fun! I'm going to write a super-terrific story."

The child is expressing her delight with the activity and excitement with the possibility of creating a super-terrific ending.

BREAK

SHORT PAUSE

At Level III, students are encouraged to extend a material or idea--to do something with it. There is more than one possibility for moving beyond what the child did in the Level II center.

At this center the children are presented with a prop box. Included in the box are mirrors, an assortment of hats, jewelry, male and female clothing, shoes and household items. The children are encouraged to act out a story.

The instructions for this learning center follow:

Welcome to the world of dreams and wishes. Here is your chance to be in a story. You can be anything or anybody you wish. You can be in a happy story or a sad one. You

can be in a cuddly story or a scary one. Use any or all of the things in this center to help you make your story come true.

Again, a short dialogue will be presented. Listen closely for examples of verbal indicators of involvement.

Child one: "Hey, this is really going to be fun! I really like to get dressed up. It's the best center I've ever seen."

Child two: "What sort of things are in this box? There are a lot of hats and clothes. This hat goes with that jacket. Oh, I know who I'll be."

Child one: "What if I put on this hat and dress? I think they will give the answer away. Do you think you can guess? Come on, guess."

Child two: "I think you are a mommy with those clothes on, but you could also be a teacher wearing the same hat and dress."

Child one: "It's my turn, it's my turn! Watch me! I'm going to be a man with this hat and tie."

Child two: "I know, I know, you're the father."

Child one: "No, I'm not! I'm the President of the United States."

Child two: "I could be President, too. I will."

Child one: "I'm going to write a story about the first lady President . . . me!"

In this short dialogue there are two examples of extending. They are: "I think you are a mommy with those clothes on, but you could also be a teacher wearing the same hat and dress." "I'm going to write a story about the first lady President." The child is enlarging an idea and applying it to another possible situation.

The category of analyzing is illustrated as follows:

"What sort of things are in this box? There are a lot of hats and clothes. This hat goes with that jacket." There's evidence of examination and relating the parts to one another.

The hypothesizing is exemplified in the statement, "What if I put on this hat and dress? I think they will give the answer away." This comment is a supposition as to what might happen.

Within the category of valuing, preferences are stated when the child says: "It's the best center I've ever seen. I really like to get dressed up." The child expresses enjoyment as she states, "Hey, this is really going to be fun!"

PAUSE

The foregoing have been a few examples of the verbal indicators of involvement. They have been presented in order to acquaint you with the categories that will be examined in our cooperative research project.

END

APPENDIX B

B. 1 OVERVIEW OF A STUDY OF THE IMPACT OF SPECIALLY DESIGNED SETTINGS ON CHILDREN'S INVOLVEMENT/A PILOT PROJECT

B. 2 CRITERIA TO BE MET IN DEVELOPING LEARNING CENTERS AT EACH LEVEL

APPENDIX B. 1

OVERVIEW OF A STUDY OF THE IMPACT OF SPECIALLY DESIGNED SETTINGS ON CHILDREN'S INVOLVEMENT/A PILOT PROJECT

Purpose:

The major purpose of this study is to test the effcacy of settings (learning centers) designed to highlight behaviors indicative of a person's involvement in an activity. Stated another way, as the possibilities for a setting highlighting involvement behaviors increases, the number of indicators of involvement increases.

Subsidiary purposes of the study include:

1. Working with teachers in the creation of settings or activities in the language arts which would highlight or encourage involvement in the task.

2. Testing observational guidelines which focus on nonverbal indicators of involvement and testing procedures employed to analyze verbal expressions of involvement.

3. Planning additional learning centers based on the data generated by analyzing verbal and nonverbal behaviors exhibited during the process o/a child's interacting with a setting.

Population:

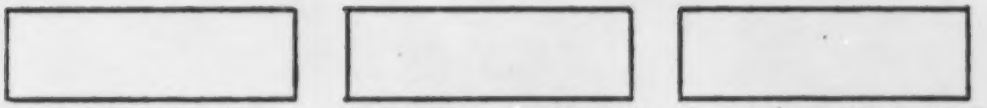
12 children randomly selected from among the English speaking first grade children who do not have a known speech impediment.

Design:

Children will be involved in learning centers as per diagram. The interests of children and specifically designated criteria (to be discussed) should be evident in the centers.

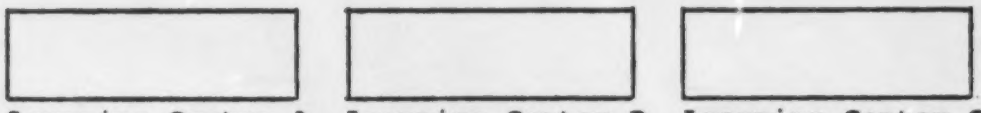
LEVEL I (Criteria to be met in developing learning centers)	4 students involved, 2 at a time	4 students involved, 2 at a time	4 students involved, 2 at a time
	Learning Center A--Developed around interests of above 4 students	Learning Center B--Developed around interests of above 4 students	Learning Center C--Developed around interests of above 4 students

LEVEL II (Based on criteria for learning centers)



Same conditions for students as in I

LEVEL III



Same conditions for students as in I

Time Schedule (Tentative):

Week or Day	Aspect of Project to be carried out
September 26 - approximately two hours	Indicators of involvement
October 3 - two hours	Designing learning centers that encourage involvement
October 13 - 1:00 two hours	
October 24 - 9:00 two hours	Gathering data via observation and analysis of verbal utterances
Week of October 20 - two hours planning with researchers, teachers--may need additional a.m.	Design three (3) different settings based on guidelines for Level I, four (4) children will be at each setting
Week of October 27 - Observation	Observation of twelve (12) children, each at three (3) different settings by two (2) university persons. Teachers may also observe to gain skill in technique
Week of November 3 - two hour planning with researchers. Teachers may need additional time	Design three (3) different settings based on Level II. Four (4) children for each setting

Week or Day	Aspect of Project to be carried out
Week of November 10	Observation of twelve (12) children, each at three (3) different settings by two (2) university persons. Teacher participation as desired
Week of November 17	Design three (3) different learning centers which meet Level III criteria
Week of November 24	Observations as per November 10

Louise M. Berman/Jessie Roderick
September 1975
for
Rippling Woods Elementary School
Anne Arundel County

APPENDIX B. 2

CRITERIA TO BE MET IN DEVELOPING LEARNING CENTERS AT EACH LEVEL

LEVEL I A teacher-directed task or learning center using prepared materials. There is no chance for students to enlarge upon the ideas. Multiple answers might be given and students asked to select from among them. No follow-up is encouraged.

LEVEL II Students are encouraged to create something on their own. This can involve constructing materials, preparing new materials or revising or changing prepared materials. This level center has a quality of novelty or newness to it and calls for personal input or initiative on the part of the student.

LEVEL III Students are encouraged to extend a material or idea--to do something with it.

APPENDIX C

SCHEDULE - FIRST GRADES

8:40 - 9:40 Opening Exercises
Attendance, collect lunch money assigned centers, give directions, Skill Block

	Teacher	Follow-up	Centers	Free Choice
9:40 - 10:00	△	□	○	*
10:00 - 10:20	○	△	*	□
10:20 - 10:40	*	○	□	△
10:40 - 11:00	□	*	△	○

11:00 - 11:15 Snack + check time

11:15 - 11:30 Alpha time

11:30 - 11:50 Handwriting

11:50 - 12:00 Get ready for lunch

12:00 - 12:50 Lunch + recess

12:50 - 1:00 Rest time + drinks

1:00 - 1:45 Math, Science, Social Studies

1:45 - 2:35 " " " "

2:35 - 2:45 Get ready to go home

APPENDIX D

MEMOS RE PROJECT MEETINGS

UNIVERSITY OF MARYLAND
COLLEGE OF EDUCATION
COLLEGE PARK 20742

DEPARTMENT OF
EARLY CHILDHOOD-ELEMENTARY EDUCATION

--M E M O R A N D O M--

TO: Participants in Rippling Woods QIP Project

FROM: Jessie Roderick

RE: Minutes of October 13, 1975 Meeting

DATE: October 15, 1975

During our meeting from 1:00 to 3:00 on October 13, 1975, sample learning centers satisfying the criteria for each of the three levels were presented and discussed. In addition, verbal indicators of involvement were presented through a tape that Diane and Shirley developed.

The following decisions about the project were made:

Teachers will introduce the centers to the children in the manner they usually introduce other centers.

Children not being observed will also have an opportunity to use the center.

Children will be told they can discuss with their partner what they do at the center.

Where the centers will be placed in the room is left to the discretion of the teacher.

Conversations of children at the center will be recorded on audio tape. If this procedure appears to bother the children it will be discontinued.

Mrs. Sherkey will check the possibility of videotaping one set of children at one center at each of the three levels.

Teachers will provide choices based on ability levels at each of the centers.

Diane will randomly select the children and send names to the teachers so they can plan for individual interests at the centers.

A letter informing parents of the project will be sent to parents of all first grade children.

Plans for the October 24 meeting from 9-11 AM:

Teachers will bring sketches of centers they plan to use for Level I centers. We will discuss the plans and begin working on them.

A sample form for teachers to use in gathering data will be presented, discussed, revised, etc.

Diane and Shirley will schedule future planning on data-gathering sessions with the teachers.

UNIVERSITY OF MARYLAND
COLLEGE OF EDUCATION
COLLEGE PARK 20742

DEPARTMENT OF
EARLY CHILDHOOD—ELEMENTARY EDUCATION

October 29, 1975

Memo

TO: Participants in the QIP Involvement Project at Rippling Woods Elementary School

FROM: Jessie Roderick

RE: October 24, 1975 Meeting at Rippling Woods

A. Selection of Chilren who will be Observed:

Twelve (12) children who will be observed as they work at specified learning centers were randomly selected from among the first grade children. Twelve (12) alternates were also selected: non-English speaking children, children with speech problems, and children the staff felt might be upset by new adults working with them were excluded.

B. Level I Center:

Ideas for constructing the Level I Center were discussed. The skill of classifying will be used in three stations dealing with purchasing items, the family, and solids, liquids, and gas.

When children complete their work at a Center they may go to free choice areas.

C. Descriptions of Centers:

Ann Kiefer and Linda Johnson said they would assume major responsibility for writing descriptions of each center. The descriptions will include the following:

I. Purpose
II. How the Center meets criteria for each level. Also included are how centers provide for interest and ability levels.
III. Description of Center. (Diagrams or sketches would also be helpful.)

D. Data Collection Sheets to be Used by Teachers:

The Children's Follow-up on Learning Centers data collection sheet was revised to include a space for what students said when they talked with others about the learning center (Item I on the sheet) and a space for

describing examples of how children integrated center ideas into other tasks (Item III on sheet).

These completed forms will be given to persons from the University of Maryland team (Diane, Shirley, Jessie, or Louise).

The Involvement Instrument - QIP Version is for the teachers' use as they see fit. We would be interested in suggestions for use or revision even though we are not collecting these forms.

The two check sheets (one for teachers and one for students) noting what children did at each center can also be used as teachers see fit. Again, if these forms are used we would like to summarize the information on them.

E. It was decided that the childrens' scores on the Metropolitan would be added to the information collected for the study.

F. Level II Center:

Possibilities for designing Level II Centers were discussed. Clay, collage, writing, and dictating were possible ways of expressing ideas. Teachers agreed to prepare a description of the Level II Center for November 4 when the University of Maryland staff comes for a visit.

G. Schedule:

The first data-collection session will be Wednesday morning, October 5th.

The second data-collection session will be scheduled during the week of November 10.

APPENDIX E

E. 1 INVOLVEMENT INSTRUMENT - QIP VERSION FOR TEACHER USE

and

RECORD OF CHILDREN'S FOLLOW-UP ON LEARNING CENTERS

E. 2 _____'S WORK AT LEARNING CENTERS

APPENDIX E. 1

INVOLVEMENT INSTRUMENT - QIP VERSION FOR TEACHER USE

Nonverbal				Verbal (✓)					
							Valuing		
Activity or Learning Center	Vision--on task V_T away from task V_A	Motion--on task M_T away from task M_A	Duration (Minutes)	Extending	Analyzing	Hypothesizing	Preference	Enjoyment	Comments

October 29, 1975

89

90

73

APPENDIX E. 1

RECORD OF CHILDREN'S FOLLOW-UP ON LEARNING CENTERS

Date Center Developed _____ Teacher _____

Instruction: Please record the names of children in the QIP research project who engage in any of the following:

I. Talks with teacher, other adult, or peers about the Center or what he did in it.

Date	Child(ren)	What Was Said

II. Returns to Center or requests to return.

Date	Child(ren)

III. Integration of Center ideas into other tasks such as writing, art.

Date	Child(ren)	Examples

IV. Comments

October 21, 1975

APPENDIX E. 2

_____'S WORK AT LEARNING CENTERS

I. T E L L A S T O R Y

ORANGE	RED	PURPLE	BLUE		

II. W H A T C O M E S N E X T?

WRITTEN	ART	

III. B E I N A S T O R Y

ACTION	OWN BOOK	

QJP
October 24, 1975

APPENDIX F

TALLY SHEET FOR VERBAL AND NONVERBAL INDICATORS OF INVOLVEMENT

Child: _____ Date: _____

Activity: _____ Time: _____

Level: _____ Observer: _____

Nonverbal					Verbal ( )						Comment
Sub-Activity	Motion M_T M_A M_{T_B} M_{T_M} M_{T_P}	Vision V_T V_A	Intensity Rec. Prec.	Intensity PDE	Extending	Analyzing	Hunching	Valuing P	Valuing E	Comments Away CA	
											1
											2
											3

APPENDIX G

DIRECTIONS FOR USING TALLY SHEET FOR VERBAL AND NONVERBAL INDICATORS OF INVOLVEMENT

(Before using the tally sheet make sure you know the definitions found in Appendix A. 1)

1. Provide information at top of tally sheet.
2. Describe the Sub-activity or activity related to the learning center in the first column on the left.
3. Code for three, one-minute intervals then break for one minute. Repeat this procedure five times or until subject withdraws from the activity whichever comes first.
4. Within each separate time segment record a Motion or Vision when it is first observed and when it changes.
5. Check in the appropriate column everytime a verbal statement is heard. (Record as many as are heard within each separate time segment).
6. Rate Intensity (Presiceness and Physical Display of Emphasis) every three minutes, then do an overall rating at the end of the observation period which will usually be 15 minutes in duration.
7. Rate the same child in each of the three centers.
8. Comment as desired in the Comments column.

APPENDIX H

TEACHERS' STATEMENTS ON LEARNING CENTERS

APPENDIX H

Q I P INVOLVEMENT PROJECT AT RIPPLING WOODS ELEMENTARY SCHOOL

Level I Center

I. What is the Purpose of the Level I Center?

The purpose of the Level I Center is to reinforce the Anne Arundel County Reading Goal of classification by having pupils sort pictures by subject matter using the task forces of reading, social studies and science.

II. How Does the Center Meet the Criteria for Level I?

The criteria for Center Level I are met by having three activities in which there is only one correct response. Pupils are not given an opportunity to extemporize.

Interest levels are provided for by using pictures that appeal to boys, to girls, or to both. Bright colors, easily recognized objects, and attractive layouts are designed.

Ability levels are provided for by varying degrees of difficulty at each activity. Activity one is easy enough for all first graders; some experience at shopping is the only prerequisite. Activity two requires prior understanding of physical needs versus physical wants in a family. Activity three requires a knowledge of the concept of matter and the ability to read the words solids, liquids, and gases.

III. What is the Description of the Level I Center?

The Level I Center is a group of three activities in three different task forces: reading, social studies, and science. All activities require the student to classify pictures by subject.

Activity one is on reading readiness. It has pictures of miniature store fronts. A child selects a picture and decides which store he would go to to purchase that object. He then places the picture of the object on the hook on the

appropriate store front. Each store has a number. The child can then check himself by looking at the back of his picture to see if the number matches that of the store front, letting him know immediately if he is right or wrong. Stores included are a hardware store, appliance store, girls' clothing store, boys' clothing store, pet store, toy store, furniture store, music store, grocery store, and jewelry store.

Activity two is from the social studies task force. Children must be able to read I need and I do not need to classify the pictures. Children place the pictures in the pocket under the correct heading. This activity is self-checking by matching the numbers.

Activity three is from the science task force. Children must be able to read the words solids, liquids, and gases. Children place the pictures in the pocket under the correct heading. This activity is self-checking by matching the numbers.

Q I P INVOLVEMENT PROJECT AT RIPPLING
WOODS ELEMENTARY SCHOOL

Level II Center

I. What is the Purpose of the Level II Center?

The purpose of the Level II Center is to reinforce the Anne Arundel County Reading Goal of predicting character actions or reactions.

II. How Does the Center Meet the Criteria for Level II?

The criteria for Level II are met by having students complete stories, by drawing pictures, making models, or dictating stories.

Interest levels are provided for by allowing students freedom of choice in selection of method.

Ability levels are provided for by giving opportunities for the more advanced students to write their own story ending. Less advanced students may make a picture ending or dictate their story ending.

III. What is the Description of the Level II Center?

The Level II Center is a variety of activities using the following materials: tape recorder, pencil and paper and art supplies.

Students must first listen to an unfinished story which has been taped or will be read by a teacher. Pupils must predict the outcome of the story by completing an activity using the materials mentioned.

Q I P INVOLVEMENT PROJECT AT RIPPLING WOODS ELEMENTARY SCHOOL

Level III Center

I. What is the Purpose of the Level III Center?

The purpose of the Level III Center is to reinforce the Anne Arundel County Reading Goal of prediction of story problems and solutions.

II. How Does the Center Meet the Criteria for Level III?

The criteria for Center Level III are met by encouraging students to use various materials and props to create their own story problems and solutions.

III. What is the Description of the Level III Center?

The Level III Center is a large box containing a variety of dress-up props for the students to use in acting out story settings of their own choosing.

APPENDIX I

ANNOTATED REFERENCES ON LEARNING CENTERS

Cohen, S. Alan. Teach Them All to Read: Theory, Methods, and Materials for Teaching the Disadvantaged. New York:

Chapter II discusses principles and operation of skills centers. Bibliography included.

Dell, Helen Davis. Individualizing Instruction: Materials and Classroom Procedures. Chicago: Science Research Associates, Inc., 1972.

Preparation of learning guides, record keeping and evaluation of individualized instruction. Examples and photographs of learning centers.

Duane, James E. Individualized Instruction - Programs and Materials. Englewood Cliffs, N.J.: Educational Technology Publications, 1973.

Individualization of instruction at varied grade levels through high school. Emphasis is on creation of learning packages and samples of packages.

Esbensen, Thorwald. Working with Individualized Instruction: The Duluth Experience. Belmont, CA: Fearon Publishers, 1968.

Primarily a description of three school projects in individualizing instruction. Emphasis on performance objectives.

Herr, Selma E. Learning Activities for Reading. Second edition. Dubuque, Iowa: William C. Brown, 1970.

Paperback book contains numerous suggestions for games, charts, and independent activities. The diagrams and illustrations are especially helpful to teachers in implementing the suggestions. Many of these ideas can be adapted for learning centers.

Hopkins, Lee Bennett. Let Them Be Themselves. New York: Scholastic Magazines, Inc., 1969.

Paperback book includes many creative suggestions for activities in the areas of improving self image, children's

literature, oral and written expression, poetry, and developing critical thinking.

Kaplan, Sandra Nina, Jo Ann Butom Kaplan, Sheila Kunishima Madsen, and Bette K. Taylor. Change for Children: Ideas and Activities for Individualizing Learning. Pacific Palisades, CA: Goodyear Publishing Company, Inc., 1973.

Step-by-step approach to creating a learning center. Extensive collection of descriptions of learning centers including games and worksheets. Many language arts centers included such as: alphabetizing, handwriting, literature, etc.

Leonard, George. Education and Ecstacy. New York: Delacorte Press, 1968.

Brief article explores management and arrangement of learning centers in a third grade classroom. Included is a discussion of reading, listening, and writing centers which offers center arrangement and materials suggestions for teachers of all levels.

Rapport, Virginia (ed.). Learning Centers: Children on Their Own. Washington, D.C.: Association for Childhood Education International, 1970.

Discussion of diagnosis and evaluation of individual instruction. Descriptions and photographs of learning stations. Suggestions for use of educational hardware.

Russell, David H. Reading Aids Through the Grades. New York: Teachers College Press, Columbia University, 1956.

Suggests three-hundred reading activities--divided by level of difficulty.

Shiman, David A., Carmen M. Culver, and Ann Lieberman (eds.). Teachers on Individualization: The Way We Do It. New York: McGraw-Hill, 1974.

Reports of teachers' experiences in individualizing their teaching and learning. Chapter 6 presents organization and examples of classroom interest centers.

Stahl, Dona Kofod and Patricia Murphy Anzalone. Individualizied Teaching in Elementary Schools. West Nyack, N.Y.: Parker Publishing Company, Inc., 1970.

Chapter 5 - Suggestions for multimedia learning centers
Chapter 6 - Suggestions on use of tape recorder for centers
Chapter 10 - Listening activities

Chapter 11 - Developing readiness skills with manipulative materials
Chapter 15 - Organization of materials for instructional packages

Talbert, E. Gene and Larry E. Frase. Individualized Instruction: A Book of Readings. Columbus, Ohio: Charles E. Merrill, 1972.

Articles covering objectives for individualization of instruction, teacher skills, and instructional materials. Highlight: Article by Arthur W. Combs, "Fostering Self-Direction."

Wagner, Guy W. and Max Hosier. Reading Games: Strengthening Reading Skills with Instructional Games. Darlen, Connecticut: Educational Publishing Corporation, 1960.

Rationale for the use of games and includes many suggestions. Divided by level of difficulty.

Waynant, Louise (ed.). Learning Center Handbook. College Park, Maryland: Reading Center, University of Maryland, 1970. (Unpublished)

Covers purpose, construction, evaluation for establishing learning centers. Sample centers illustrated. Brief bibliography.

Waynant, Louise P. and Robert M. Wilson. Learning Centers - A Guide for Effective Use. Paoli, Pa.: Instructo Corporation, 1974.

Williams, Lois E. Independent Learning - In the Elementary School Classroom. Washington, D.C.: American Association of Elementary, Kindergarten, and Nursery Educators, 1969.

Describes many independent activities for children and suggests ways of organizing the classroom to encourage and facilitate use of independent activities.

Wilson, Robert M. and Linda B. Gambrell. Contract Teaching for Academic Success. Silver Spring, Maryland: Reading Education, Inc., 1975.

Brief guide to the use of contracting for success in learning and for the development of decision making skills. Chapters include discussion of contract teaching/learning as a means of individualization of instruction, preparation, strategies and obstacles to successful contract teaching, and proven examples of contracting in many subject areas. Especially useful are descriptions of contracting for spelling, for sight words and for other language arts activities.

The procedures employed in this study satisfy criteria for conducting research involving human subjects.